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(71) Applicant(s)
Neopost Limited

(Incorporated in the United Kingdom)

PO Box 3, South Street, ROMFORD, Essex, RM1 2AR, United Kingdom

(72) Inventor(s)
Raymond John Herbert

(74) Agent and/or Address for Service
Hughes Clark & Co
114-118 Southampton Row, LONDON, WC1B 5AA, United Kingdom

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WO 92/17861 A

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(54) Mail handling apparatus

(57) Mail handling apparatus has a secure container to receive mail items to be handled by a postal authority or other carrier. The apparatus includes means (17) to receive parent for a mail item. Prior to inserting the mail item into a slot (13), the user is required to pay the required postage charge and to enter on a keyboard (15) the destination town and destination post code of the mail item. A controller checks the post code against the town to ensure that the information input by the user is correct. Provided the input information is verified and payment is received, the controller permits entry of the mail item into the container.

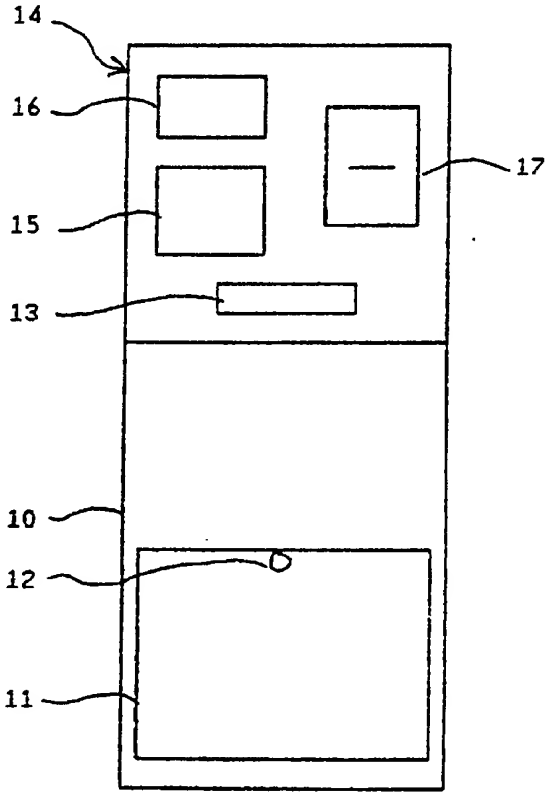

FIGURE 1

GB 2 274 622 A

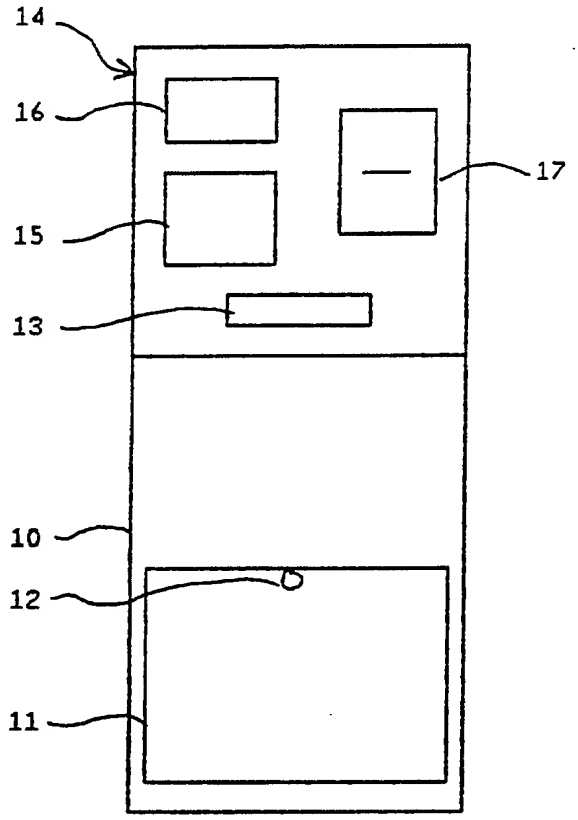

FIGURE 1

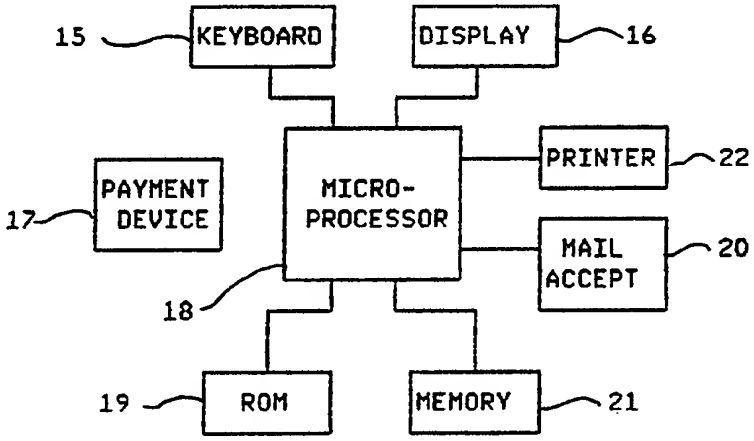

FIGURE 2

MAIL HANDLING APPARATUS

This invention relates to mail handling apparatus and in particular to apparatus for printing on mail items an impression to indicate that a postage charge has been paid.

Franking machines are well known for metering postage charges applied to mail items by way of printing of a franking impression indicative of the value of postage charge. Such franking machines include means to carry out accounting in respect of the postage charges applied to items and printing means controlled by the accounting means to print a franking impression indicative of a postage charge for which proper accounting has been carried out by the accounting means. Commonly the accounting means includes a descending register to store a value of credit available for franking of items and, as each item is franked, the value of credit is decremented by the value of postage charge for the item. Because both the authorised user of the franking machine and the postal authority rely on the accounting means to provide a proper and correct record of value used in franking items it is necessary to prevent unauthorised access to the accounting means and to ensure that the printing means cannot be operated to print a postage value for which proper accounting has not been carried out. In addition, the franking impression has a format which cannot easily be copied. After franking by the franking machine the postal authority requires that the franked items of mail are entered into the postal system only at a postal office specified in relation to the specific franking machine used to frank the items. The use of franking machines tends to be limited to business organisations who send relatively large quantities of mail and for whom it is not inconvenient to enter the mail items at a specified post office. Accordingly individuals wishing to send mail items by the postal service must purchase stamps to be

adhered to the mail items prior to entering the items into the postal system.

According to the present invention mail handling apparatus includes a secure container for mail items; an input path to the container; mail acceptance means preventing input of mail items along said into said container; and control means operated by input of value corresponding to a postage charge for a mail item to print an impression on a mail item in said passage indicative of said input value and to operate said mail acceptance means to permit passage of said mail item along said path into said container.

An embodiment of the invention will now be described by way of example with reference to the drawings in which:-
Figure 1 is a diagrammatic representation of mail handling apparatus and
Figure 2 is a block circuit diagram of the accounting and control circuits of the apparatus.

Referring first to Figure 1, a box container 10 provides a receptacle for mail items which are entered into the postal system for distribution by the postal service to required destinations. The container 10 is of similar construction to a conventional letter box and has a door 11 for access to the interior of the container for removal of franked mail items. As is usual with letter boxes, the door is locked by a lock 12 to prevent unauthorised access to the container. A slot 13 for entry of mail items into the container is provided adjacent an upper part of the container. A control and accounting unit 14 is located at the upper part of the container. The accounting unit is provided with a keyboard 15 for input of information to the unit by a person wishing to post a mail item. A display 16 is provided to display information to assist in use of the apparatus. A payment device 17 is provided to

accept payments from users of the apparatus.

Referring now to Figure 2, the control and accounting unit includes a microprocessor 18 operated under control of program routines stored in a read only memory (ROM) 19. The microprocessor receives data input from the keyboard 15 and controls the display device 16 to provide information and instructions to a user of the apparatus. The microprocessor also receives input signals from the payment device indicating the monetary value of payments received by the device 17. The payment device may be operated by entry of coins, by credit card, by prepayment cards or by smart card. Payment devices for operation by insertion of coins includes means to accept coins and to check the value of coins inserted in the payment device and provide a signal to the microprocessor representing the value of coins inserted. Payment devices for operation by credit or other cards include means to read data from the card. In operation by credit card the microprocessor generates debiting data to enable the postage charge to be debited from the credit card account. In operation of the payment device by prepayment card or smart card, the payment device includes means to decrement a value recorded on the card by the amount of the postage charge. Normally, passage of mail items through the slot 13 along a path into the interior of the container is prevented by mail acceptance means 20 controlled by the microprocessor 18.

When a user wishes to input an item to the apparatus, the user operates the keyboard to input data required by the apparatus prior to acceptance of the item. The information required would include the amount of postage charge to be applied to the item and the postal service class required. Additionally it is preferred that the user is required to enter the destination town and post code. The accounting unit is provided with memory 21

which stores a table correlating towns and post codes whereby the microprocessor is enabled to verify that the entered post code is correct in relation to the destination town entered. The microprocessor verifies that a payment corresponding to the entered postage charge has been received by the payment device and also may verify that the entered postage charge is a valid charge in respect of the service class entered. Provided the verification is satisfactory, the microprocessor then proceeds to a routine for acceptance of the item into the apparatus. In the acceptance routine, the mail acceptance means 20 normally preventing passage of the item into the interior of the container 10 is operated to permit passage of the mail item and to feed the item from the slot 13 along a path into the container. A printing device 22 (not shown in Figure 1) is provided adjacent the path of the mail item and is controlled by the microprocessor 18 to print postal information on the entered mail item. The information printed would be in substitution for any marking or coding of items at a postal sorting office. The information printed would include an authentication mark and coding relating to postal class, destination and value of postage charge. The printing may be in plain text but it is preferred that the information be printed in a form readable by low cost reading equipment, e.g. bar code readers to enable subsequent automatic sorting and handling of the mail. If desired the information may be printed at more than one position, for example on opposite faces of the mail item, to obviate any necessity for facing the items at the sorting office.

The memory 21 may be utilised to store accounting information, for example the accumulated total of payments received and the number of items input to the apparatus. If desired means may be provided to print out at intervals, for example when the container 10 is emptied of mail items, accounting information on a tally strip.

In order to prevent input of mail items when the container 10 is full, the microprocessor may be operated such as to prevent further input of mail items when a predetermined number of items have been received or means may be provided in the container to detect when the items stacked in the container reach a predetermined height and the microprocessor is responsive to a full signal from the detector means to prevent entry of further items. If the number of items entered is utilised to determine a container full condition, means are provided to reset the count when the container is emptied. Resetting of the count may be effected automatically by means responsive to the closing and locking of the door 11.

The mail handling apparatus may be operated in a stand alone mode but additional benefits to the postal service may be provided if the apparatus is linked to a central computer system of the postal service. With such links, the postal authority can be provided with information on the quantity, service class, destination and other information relating to mail items received in the container. This information may be utilised by the postal authority to assist in planning the further handling of the mail items. Incentives may be provided to encourage users to use the apparatus for entry of mail items into the postal system.

The apparatus ensures that only mail items for which a payment for postage has been made are received into the container and the markings applied to the mail items are printed on the mail items after acceptance of the items into the apparatus. Accordingly there is substantially no possibility of fraudulent use.

Figure 1 is diagrammatic representation of mail handling apparatus for the purpose of illustrating the operation of

such apparatus and it is to be understood that the physical construction of the apparatus may have other forms in which the elements of the apparatus are disposed differently.

CLAIMS

1. Mail handling apparatus including a secure container for mail items; an input path to the container; mail acceptance means preventing input of mail items along said into said container; and control means operated by input of value corresponding to a postage charge for a mail item to print an impression on a mail item in said passage indicative of said input value and to operate said stop means to permit passage of said mail item along said path into said container.

2. Mail handling apparatus as claimed in claim 1 including electronic control and accounting means and data input means operable by a user to input postal information relating to an item to be input to the apparatus and wherein said control and accounting means is operative to verify data entered by said input means.

3. Mail handling apparatus as claimed in claim 2 wherein the control and accounting means is operative to verify that the value received is equal to a postage charge entered by the input means.

4. Mail handling apparatus as claimed in any preceding claim including means responsive to quantity of mail items received in the container and operative to prevent further input of mail items when a predetermined quantity of mail items has been received in the container.

5. Mail handling apparatus as claimed in any preceding claim and including means to enable communication of data between said apparatus and a remote postal office.

6. Mail handling apparatus constructed and arranged to operate substantially as hereinbefore described with reference to the drawings.

Patents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report) – 8 –

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Relevant Technical fields

(i) UK Cl (Edition L) B6C: CVAA, CVSA, CVSD

(ii) Int Cl (Edition 5) G07B

Search Examiner
A DAVEY

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASE: WPI

Date of Search
4 MAY 1993

Documents considered relevant following a search in respect of claims 1-6

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	WO 92/17861 A (PI ELECTRONICS) - see Figure 1 for example	1-3

Category	Identity of document and relevant passages	Relevant to cla[illegible]s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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